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JT-NM September 2019 Newsletter Articles

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Published: 22 August, 2019

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The IP Showcase at IBC 2019, from Wes Simpson for VSF

Building on the success of IP Showcases in 2017 and 2018, the 2019 edition of the IP Showcase at IBC moves forward in a new direction. This year, in place of rack after rack of live equipment showing media transport interoperability demonstrations, the focus shifts to three important areas:

- **JT-NM Tested program** – This program provides an independent test of product capabilities with respect to established specifications from SMPTE, AMWA and the JT-NM. Results of the August, 2019 testing program overseen by the EBU and the IRT will be presented in the IP showcase, including a full list of participating products. Several racks of equipment will also be on static display to illustrate the wide range of IP media products that are currently available.

- **IP Showcase Theatre** – Over 50 speakers and panelists will be making live presentations during IBC, covering a full range of IP video and audio technologies and applications. Over a dozen case studies of actual deployments will be featured across the 5-day program. Live speakers will be available to answer audience questions at the close of each 30-minute session. This program, curated by the VSF, will also be recorded and made available online after the close of IBC.

- **Future Zone** – As users gain more experience with IP media networks, new features, functions and capabilities can be applied that can help make systems more productive, more flexible and easier to deploy and use. In the Future Zone display, forthcoming standards, practices and technologies will be highlighted and explained.

AMWA NMOS update from Peter Brightwell, BBC R&D for AMWA

On June 3-7, 2019, the AMWA Networked Media Incubator held a **virtual workshop** on NMOS API Interoperable Security. Participants from eleven companies around the world connected their software systems over the Internet to a cloud VPN. A DHCP server, DNS server (for unicast DNS-SD), IS-04 Registry, broadcast controllers, and nodes capable of IS-05 Connection Management were attached to the VPN. Multiple vendors tested Best Current Practices BCP-003-01 secure communications (approved) and BCP-003-02 secure client authorization (work-in-progress). The workshop was held online as a

direct response to the industry's request to have fewer face-to-face events, while still enabling multi-vendor interoperability testing. The workshop showed great progress in securing the NMOS APIs."

This opportunity to test in advance at the workshop made it easier to make progress when seventeen Networked Media Incubator organisations came together at a **physical workshop** at CBC, Montréal on July 8-12, the first workshop to be held outside of Europe. All participants successfully demonstrated BCP-003-01, meaning that encrypted access to the IS-04 was now the default, not the exception. Good progress was also made on BCP-003-02 secure client authorization, and several new companies successfully tested implementations of the AMWA IS-07 Event and Tally specification, which provides a future-looking way of carrying time critical data over a range of different IP transport protocols as best suit the infrastructure. The workshop also allowed several participants to successfully show that their NMOS implementations worked on CBC's test networks, being used in the commissioning of the new IP-based facility in Montréal.

Both of these workshops benefitted from recent developments in AMWA's test suite for NMOS (https://github.com/AMWA-TV/nmos-testing/). This allowed participants to carry out testing in advance, reducing the amount of time required during the events. A similar approach will be used in the upcoming JTNM Tested Event, for TR-1001 testing.

New AES Standards Development in Networked Audio from Richard Cabot for AES

The AES67 and AES70-1,2,3 standards were revised in 2018. In addition to ongoing work on these four standards, the Audio Engineering Standards Committee has three active development projects in the networked audio area:

AES-X238 is a project to develop a statement of requirements for a directory service architecture suitable for professional media networks of all scales, from tabletop to intercontinental. The architecture will be based on a rigorous namespace specification that is independent of the underlying network topology. It will work with present and future media networks over the full range of professional audio and video applications and will address at least the following areas:

1. Registration, query, and administration protocols;
2. Security mechanisms;
3. Directory data model;
4. Query language and related semantics; and
5. Scalability strategies.

AES-X242 is a project to define a standardized method for transporting metadata associated with the audio in an AES67 stream in parallel to, rather than part of, the AES67 stream. The standard shall define synchronization between the audio metadata transport and the associated AES67 transport. The transmission method shall be low latency and have a level of network performance equivalent to AES67. Within the scope is formatting of the streaming audio metadata for transport. Suggested is an open standards based framework that supports both static and dynamic, time synchronous metadata that is optimized for live workflow applications. The standard shall consider all use cases for metadata associated with AES67, support existing AES audio metadata standards, and be extensible for future metadata requirements. The standard will consider binding between the audio metadata transport and the associated AES67 transport.

AES-X243 is a project to publish an informative document that recommends the way to implement AES70-CM3 connection management for AES67 unicast and multicast connections. AES70 includes a comprehensive stream connection management feature set that can support a variety of media transport methods over a standard (albeit customizable) control interface. By having a single, powerful control interface, AES70 connection management will alleviate current issues of AES67 interoperability, while at the same time facilitating the use of AES67 in conjunction with other standard and proprietary media transport schemes. The result will maximize interoperability without overcomplicating system controllers.

Anyone interested in contributing to these efforts should contact the AES Standards Manager at standards@aes.org.